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ABSTRACT

During the 1987 Agricultural Field Day at California Polytechnic Institute in Pomona, an experimental computer applications contest was offered to Future Farmers of America (FFA) chapters in California. The contest consisted of two classes of competition: a demonstration or presentation of a computer topic and a written test on general agricultural computer knowledge. Following the competition, the contest was evaluated through a mailed questionnaire to the contestants and their advisors. The contest was revised, and the revised format was offered at the 1988 Agricultural Field Day as a trial state finals contest. This revised contest offered students three classes of competition: a written test on general computer knowledge, a computer application of an agriculture-based problem, and an oral presentation on a computer topic. Test questions were drawn from the text, Understanding Microcomputers. The following three-year schedule for the type of computer application tested was identified: 1988--spreadsheet application, 1989--word processing application, and 1990--database management application. A three-year schedule of topics was also identified for the oral presentation: 1988--innovative use of computer programs in agriculture, 1989--computer and its applicability to the supervised occupational experience program, and 1990--computer graphics in agriculture. In 1987, 11 competitors participated; in 1988, 27 Future Farmers competed. (YLB)

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FFA COMPUTER APPLICATIONS CONTEST

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INTRODUCTION/NEED FOR THE IDEA

Computer literacy is an increasingly important requisite skill for succeeding in today's advanced agricultural industry. As a means of enhancing the development of this literacy in students of vocational agriculture, the FFA Computer Applications contest was developed at Cal Poly Pomona and accepted by the California State FFA Association as a trial state contest. This contest was designed to test students' technical application skills with the microcomputer and general knowledge of issues affecting computing in agriculture.

The development of the microcomputer for personal and general use in the late 1970's unveiled a new and exciting mechanism to improve education (Baker, 1982). Further, microcomputer technology for agricultural instructional purposes provides one of the most promising innovative teaching strategies of recent years. Luehrmann (1982) stated:

> The computer is unique among information techniques in that it permits intelligent interaction with the learner. All previous information technologies have been one-way paths for distributing facts and ideas. ...The computer is also unusual in that an individual can learn to use it constructively and creatively as an aid to conceptualizing and solving problems. (p. 14)

FFA contests and awards are recognized as a means of motivating FFA members and providing these members with opportunities for refining individual skills and attitudes. Gadda (1978) stated that competition can improve the teaching-

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learning situation. While cautioning against a primary objective of winning, Mayfield (1978) stated that contests are "educational experiences" .

In California, there are 34,546 students enrolled in agricultural education. Approximately 29,000 of these individuals are presently active in the Future Farmers of America (L. Sehnert, personal communication, April 15, 1988). Since there is little doubt that the future of agricultural instruction will be closely tied to microcomputers, an FFA contest designed to promote the concepts of microcomputing technology should provide educational benefits to a significant number of teachers and students. As a result of this implied need, the FFA Computer Applications contest was created for the California Association of Future Farmers of America.

METHODOLOGY

During the 1987 Agricultural Field Day at Cal Poly Pomona, an experimental contest was offered for the first time to FFA chapters in California. This contest consisted of two classes of competition: a) a demonstration/presentation of a computer topic, and b) a written test on general agricultural computer knowledge. Following the competition, the contest was evaluated through a mailed questionnaire to the contestants and their advisors. Results of this evaluation and recommendations for improvement were presented to teachers of agricultural education at the annual state conference. Suggestions for improving the format of the contest by teachers and students were reviewed and a revised format for the contest was developed. This revised format was adopted by the California Agricultural Teachers' Association on a trial basis as an official state FFA contest. The revised contest was offered at the 1988 Agricultural Field Day as a trial state finals contest.

RESULTS TO DATE AND IMPLICATIONS FOR THE FUTURE

The FFA Computer Applications Contest, as revised, offers students three classes of competition: a) a written test on general computer knowledge, b) a computer application of an agricultural based problem, and c) an oral presentation on a computer topic. The official rules for this contest are appended to this document (Appendix A).

In order to provide students with an equitable way to prepare for the written test on computer knowledge, a text was identified from which the test questions would be drawn. This text, Understanding Microcomputers (1987), is available from the American Association of Vocational Instructional Materials, Athens, Georgia. Test questions were of the multiple choice, true/false, and matching format. Contestants were given 45 minutes to complete this portion of the contest. Individual responses to the test were recorded on computerized forms and graded using a Scantron reader.

The following three year schedule for the type of computer application tested in this contest was identified: 1988- Spreadsheet application, 1989- Wordprocessing application, 1990- Database management application. An agricultural problem utilizing spreadsheets was developed and used during the 1988 trial state contest. Contestants were given 45 minutes to complete this portion of the contest. Competitors provided their own hardware and software. Judges were asked to make their evaluations through observing and questioning students as they worked through their problem.

A three year schedule of topics was also identified for the oral presentation class: 1988- Innovative use of computer programs in agriculture, 1989- The computer and its applicability to the SOEP, and 1990- Computer graphics in agriculture. Contestants were limited to two minutes in which to make their presentations followed by two minutes in which to respond to judges' questions.

During the 1987 Agricultural Field Day, 11 competitors participated in the FFA Computer Applications contest. In 1988, 27 Future Farmers competed. The apparent trend in the popularity of this contest is consistent with the pervasive acceptance of computer technology in the agricultural industry and agricultural education. As the knowledge of this contest becomes better diffused throughout FFA chapters in California, greater participation is anticipated.

In summary, it is proven that the microcomputer shows promise in complementing many of the instructional strategies used in secondary programs. The individual benefits achieved by students through competition in an FFA contest, coupled with the opportunities for refining and developing new skills in computer technology, provided the impetus for the creation of the FFA Computer Applications contest. Agricultural education students, through their participation in this contest, may well have the opportunity to advance their computer expertise, thus enhancing their preparation for careers in a technological society.

COST/RESOURCES

The costs for duplicating tests ($10.00), mailing fees for contest registration materials ($7.50), and contest trophies and ribbons ($55.00) were the only expenses incurred for this activity. The total personnel required to operate this contest were six university students and four faculty judges. The contest was held in three rooms with one additional room used for contest tabulations.

REFERENCES

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Luehrmann, A. (1982). Technology in science education. The Journal of Computers in Mathematics and Science Teaching, 1(4), 13-17.

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Appendix A

FFA Computer Applications Contest

The FFA Computer Applications Contest provides Future Farmers with the opportunity to demonstrate their computer knowledge and their abilities to apply this knowledge to an educational/agricultural situation.

Contest Description

1. The contest is composed of three classes:

Class 1: Objective written test on general computer knowledge (100 pts)

Contestants will be given forty-five minutes to complete a 50 question multiple choice, true/false, and matching test. All questions will be drawn from the text Understanding Microcomputers produced and distributed by AAVIM and currently distributed by VEP.

Class 2: Computer applications problem (100 pts)

Contestants will be given forty-five minutes to complete a computer applications problem in one of the following problem areas: a) electronic spreadsheet, b) database management, or c) wordprocessing. The problem area will be identified as follows: 1988- Spreadsheet applications, 1989- Wordprocessing applications, 1990- Database management applications. The specific problem/application will be given to the contestant at the beginning of this class. Examples of specific problems include: a) using real data, demonstrate a spreadsheet application to calculate FFA fruit sales; b) using a wordprocessing program, type a letter inviting FFA supporters to your chapter banquet. Using a mail merge function, generate individual letters to five of these supporters; c) develop a budget using a spreadsheet to determine the profitability of a SOE program; and d) using a database program, establish an equipment inventory for an FFA chapter.

During a portion of this class, the contestant will be judged and subjected to oral questions and may provide oral explanations.

Class 3: Oral presentation of a computer topic (50 pts)

A maximum time limit of two minutes will be allowed for the oral presentation on the topic. Time will begin when the contestant begins his/her oral presentation; after two minutes the judges will stop the presentation if not completed at that time. An additional two minutes will be allowed for the judges to ask questions. Contestants will not use computer hardware or software during this presentation. Topics selection will be as follows: 1988- Innovative use of computer programs in agriculture, 1989- The computer and how it is applicable to the SOEP, and 1990- Computer graphics in agriculture.

2. The computer contest will be limited to participation by a maximum of three contestants from each chapter. Contestants will compete as individuals and as teams.

3. Computers, printers, and software should be supplied by the contestant. The institution hosting this contest will make an attempt to supply Apple IIe and IBM compatible microcomputers with two disk drives and dot matrix printers. However, special requests for this equipment must be made at least 21 days prior to the contest. A forty-five minute period of time will be allocated at the beginning of this contest in order to allow contestants to set up their equipment.

4. Contestants will be allowed to use documentation, personal notes, and other written materials during the computer applications portion (Class 2) of this contest.

5. Contestants shall draw for places in the oral presentation portion (Class 3) of this contest. The contest chairperson shall then introduce each contestant.

6. Tie Breaker:
   a. The total score(s) of the individual or team will determine the high individual or team.
   b. If teams are tied overall, then the team with the highest scoring individuals (s) is the winner.

FFA Computer Applications Contest
Contest Scorecard

Contestant _____ # _____

Chapter _____ School _____ Instructor _____

Address _____ City _____ Zip _____

Equipment:
Computer _____ Printer _____ Other _____

Class 1: Objective written test.....
Score: _____ (100 pts possible)

Class 2: Computer Applications Problem

Software Used: ____ Commercial (indicate name _____)
____ Original program

Student Performance:

Knowledge of hardware	Pts (20) ____
Knowledge of software	Pts (20) ____
Organization of material	Pts (5) ____
Voice	Pts (5) ____
Stage presence	Pts (10) ____
General effect	Pts (20) ____
Answers to questions	Pts (20) ____
	Total Pts (100) ____

Class 3: Oral Presentation of a Computer Topic

Student Performance

Knowledge of subject	Pts (10) ____
Organization of material	Pts (5) ____
Voice	Pts (5) ____
Stage presence	Pts (10) ____
General effect	Pts (10) ____
Answers to questions	Pts (10) ____
	Total Pts (50) ____

Total Points Earned:

Class 1 Pts (100) _____
Class 2 Pts (100) _____
Class 3 Pts (50) _____

Total Pts (250) _____